

REMARKS

Claims 1-20 were pending in the present application. Claims 1-4 and 6-11 stand rejected and Claims 5 and 12-20 are withdrawn from consideration. By virtue of this response, Claims 1, 10, and 11 have been amended, and Claim 21 has been added. Accordingly, Claims 1-4 and 6-11 and 21 are currently under consideration. Amendment and cancellation of certain claims is not to be construed as a dedication to the public of any of the subject matter of the claims as previously presented. No new matter has been added.

Rejections

Claims 1-4 and 8 stand rejected as anticipated by any one of Stahmann, EP 1145653, JP 57-177683, and JP 57-102166. Claims 6, 7, and 10 stand rejected as anticipated by any one of Stahmann, EP 1145653 or JP-177683. Claims 9 and 10 stand rejected as anticipated by JP 57-102166. Claim 11 stands rejected as anticipated by Stahmann and EP 1145653.

Claims Amendments

Certain of the present claims have been amended. The amendments to Claims 10 and 11 are merely to improve the form of these claims, not for reasons of patentability, and not responsive to any rejection.

Claim 1 has been amended also. The amendment to the preamble of Claim 1 states "A method of processing a nut which has already been removed from its shell." It is understood that generally in the field, the term "nut" indicates the entire fruit or product, including the inedible shell. It is further noted that the term "nut" used in this context includes more than true nuts, which of course are fruits of a tree. It also includes for instance peanuts and similar products which are commonly referred to as nuts, which while in a botanical sense are not nuts, are used in the same way as true nuts and processed in the same way. Also these other types of nuts invariably include a shell or equivalent, as do peanuts.

The term “nut” as used in the present application consistently refers to the shelled product also known as the nutmeat. This is made clear in the specification paragraph 2, second sentence “After extracting the edible portions from the harvested nuts (portions after being removed from the shells), raw material nuts or processed nuts after being roasted are used for a variety of purposes”. This is emphasized in paragraph 19, last sentence “Where the nut is of a type that includes an outer shell containing a seed, the nut fragment is a fragment or portion of the seed contained within the shell, and does not refer to a fragment or portion of the outer shell.” This is consistent where the term “seed” is what is more generally referred to as a nutmeat. It is clear therefore that the processing in accordance with the invention refers to working with the already shelled nuts or nutmeats as commonly referred to. Thus the present invention is not directed to shelling, but instead processing the nutmeats to fragment them.

The technical problem to which the present method is directed is at paragraph 3, first sentence “In the conventional mechanical separation using a grinder or a cutter, the production of undesirable powder or small particles generally cannot be avoided during the grinding process. In addition, it has been difficult to efficiently process the nut fragments in the desired sizes. In addition when the nuts have a high oil content, the ratio of powder or unusable scrap particles to the desired nut fragments produced during grinding increases.” Thus the present method is directed to producing nut fragments of uniform size without (or with minimum) powder. Clearly this is not directed to powdering nuts, but to making nut fragments, for instance, as used in cookies, etc., where it is important that the nut fragments be of uniform size. The production of nut powder of course then is problematic, first because it is wastage and second because it is relatively difficult to eliminate the powder from the nut fragments. The presence of the powder makes the resulting nut fragments less useful since it must be removed by a secondary process, increasing production cost. Typically the prior art grinding or cutting to produce nut fragments produces the undesirable secondary products (powder and undersized fragments) referred to in the last sentence of paragraph 3 which are waste or hopefully sold, but typically for a nut paste or other lesser usage. The present method is directed to eliminating the wastage caused by powder or undesirably small sized fragments.

Also as pointed out in paragraph 4 “Another result of conventional mechanical grinding techniques is that the compression of the raw material nuts when grinding the nuts causes the oil contents in the raw material nuts to leach out.” This leaching out is a problem since it results in oil being present on the nut surface rather than being captured within the nut fragment. As well known, nut oils very quickly oxidize in air, thus causing spoilage, which is also undesirable. It is therefore important to keep the oil trapped within the interior of the nut fragments rather than causing this undesirable leaching out, which is a direct result of conventional mechanical grinding.

References

The Examiner cited four references. For the reasons pointed out above, none of these references meet the claims as amended.

Stahmann

Stahmann is directed to nut shelling. See Stahmann Abstract referring to “shell removal”. See also column 2 of Stahmann beginning at line 16:

The present invention is of a method and apparatus for cryogenic rheological modification of shelled foods comprising: providing a shelled food comprising an exterior shell and interior meat and briefly exposing the shelled food to a cryogen to substantially modify rheology of the exterior shell while substantially leaving rheology of the interior meat unaffected.

Further at column 2, line 28 “Exposing comprises briefly exposing shelled food to a cryogen for a time sufficient to enhance fractureability of the shells”.

The remainder of column 2 of Stahmann makes it clear that the whole point of his process is shelling the nuts (here of course the term “nut” including both the shell and the nutmeat) to remove or shatter the shells by making them brittle due to the cryogenic exposure.

This is emphasized at column 3, beginning line 19 “The hydration step reduces the Young’s modulus of the nut while the cryogenic exposure increases the Young’s modulus of the shell while decreasing the shell’s yield stress. In this preferred embodiment, fracturing of the shell

occurs at less applied stress and with less damage to the nutmeat.” Clearly therefore Stahmann is directed to shelling while keeping the actual nutmeat intact. The emphasis is that there is no real effect on the nutmeat which is kept intact. Therefore Stahmann is not a nutmeat fragmenting technique, but merely a shelling technique. As such, it is not particularly relevant.

EP 1145653

This European patent application is also directed only to shelling. See paragraph 2 “Until now there are several traditional ways to crack the shell”. The shelling techniques described in the following paragraphs are frying the entire nut in sand, using a hammer, etc. The invention is to shock freeze the entire nut so as to remove the shell, see paragraph 9 “By shock freezing the outer shell and inner part of the shell (“inner shell”) of the candle nuts becomes a frozen solid and brittle, but the inner part of the candle nuts remain unfrozen so that the shell can be easily removed, so that the damage of the inner part can be avoided.”

Apparently, these candle nuts have both an outer shell and an inner shell, but the point is to remove the outer shell, which is apparently very tough in this particular type of nut. However there is no reference to doing any processing on the actual nutmeat, but merely to cracking the shells, see also paragraph 15. Hence this reference is also not relevant.

JP 57-177683

This reference, see Abstract, is directed to finely powdering peanuts to make a peanut powder for tofu. See first sentence of Abstract “Peanuts are finely powdered in a low-temperature atmosphere and the powder is combined with starch to prepare the material for peanut tofu...”.

See also in the “Constitution” part of the translation provided by the PTO “After raw or roasted peanuts are dipped in liquid nitrogen for a few minutes, they are crushed in a low-temperature atmosphere of lower than -65°C into a fine powder.”

Hence this is clearly directed to purposely crushing the nuts into a fine powder. Note that in contrast as pointed out above, the present invention is directed to avoiding powdering the nuts since nut fragments are desired, not a nut powder.

JP 57-102166

A full translation of this reference has been provided by the Applicant. A copy is enclosed.

The translation makes it clear that like the other Japanese reference, the purpose is to produce a fine powder. See the translation section 3 on page 2 “A fine powder of seeds with high fat content which are immersed in liquid gas, and subjected to impact cutting in a low temperature atmosphere”. Hence not only is the point to produce a fine powder, but also this is done by “impact cutting”, effectively the same as grinding.

See also section 3 on page 3, the second paragraph on the page “It has hitherto been difficult to pulverize seeds which contain a large amount of fat...and methods are adopted wherein the seeds are cracked or mashed into a paste as far as possible...”. Hence it is clear that the point here is to make a nut paste or powder rather than fragments. This is repeated in the next paragraph “The purpose of the present invention...provides a method for pulverizing seeds with high fat content, a device for this purpose, and a fine powder of seeds...”.

In the last paragraph on page 3, the pulverizing method is indicated as including impact grinding, see line 36, page 3.

See also page 5 “The grinder B comprises a cylinder 12 having a large number of protrusions 11 shaped like needles or pleats etc., a plurality of rotating blades 13,...”. Thus this is a grinder which grinds up the nuts in a low temperature atmosphere. See further detail at page 6, beginning at line 23 through line 28, making clear that the “seeds” (nuts) are ground against the protrusions by the rotating blades and pulverized and thereby made into a powder.

Hence this reference is both directed to making a fine powder (see page 7, line 19) of the nuts and uses impact grinding, which of course is efficient in making a powder, but cannot produce uniform fragments.

Thus this reference is also believed not particularly relevant to the invention.

Claims Distinguish Over the References

Claim 1 has been amended. First, the preamble now recites “A method of processing a nut which has already been removed from its shell.” This clearly distinguishes over the two references which refer to merely shelling nuts, as pointed out above. This includes Stahmann and EP1145653.

Further, the final portion of Claim 1 as amended recites “separating the nut into a plurality of nut fragments without mechanical compression of the nut, and thereby not powdering the nut”. This reads on the specification, paragraph 34, which says “Fifth, because the raw material nuts are not mechanically compressed, a powder is not generated, resulting in a high product yield. Due to the absence of a powdery product, the small nut fragments are hardly contaminated, resulting in improved quality of the small nut fragments.”

Hence clearly Claim 1 distinguishes over the two Japanese references, which are both specifically directed to providing a paste or powder and which also in the case of the reference JP 57-102166, explicitly uses mechanical compression (grinding). Also, it appears that reference JP 57-177683, which has not been fully translated, also requires grinding because it explicitly says that the nuts “are crushed” in the partial translation provided by the PTO. Moreover the crushing of course is into a fine powder, as also stated in that translation. Hence JP 57-177683 is apparently essentially similar to the other Japanese reference in that it uses crushing by mechanical means in a cryogenic atmosphere to produce a powder.

Hence clearly Claim 1 as amended also distinguishes over these two Japanese references.

Dependent Claims

Dependent Claims 2-4 and 6-11 distinguish over the references for at least the same reason as base Claim 1.

New Claim

New Claim 21 has been added reading on paragraph 49 of the specification, which says in pertinent part “In some embodiments, the nuts may be dropped, for example, from a height of several tens of centimeters.” This is to enable the actual fragmentation after exposure to the low temperature.

It is not believed that any of the references disclose any such fragmentation by dropping. Hence Claim 21 further distinguishes over the references in addition to the reasons pertinent to its dependency on base Claim 1.

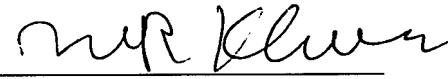
CONCLUSION

In view of the above, all presently pending claims in this application are believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue. If it is determined that a telephone conference would expedite the prosecution of this application, the Examiner is invited to telephone the undersigned at the number given below.

In the event the U.S. Patent and Trademark Office determines that an extension and/or other relief is required, Applicant petitions for any required relief including extensions of time and authorizes the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to Deposit Account No. 03-1952 referencing Attorney Docket No. 559452000100.

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Respectfully submitted,

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